Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-44. Canceled

45. (New) A cloning system for generating recombinant adenovirus, said cloning system comprising:

(a) an Ad backbone plasmid comprising an Ad genome lacking map units 0 to 9.2, and

(b) a shuttle plasmid comprising Ad sequences from 0 to 1 and 9.2 to 16.1 map units of an Ad genome,

wherein the numbering of the map units starts with the lefthand ITR.

46. (New) The cloning system of claim 45, wherein an open reading frame constituting E4 in said backbone plasmid comprises a modification.

47. (New) The cloning system of claim 46, wherein the modification is a substitution, insertion, or deletion of one or more nucleotides.

48. (New) The cloning system of claim 45, wherein an open reading frame constituting E3 in said backbone plasmid comprises a modification.

49. (New) The cloning system of claim 48, wherein the modification is a substitution, insertion, or deletion of one or more nucleotides.

50. (New) The cloning system of claim 48, wherein the modification comprises insertion of a multiple cloning site.

51. (New) The cloning system of claim 48, wherein one or more genes required for Herpes Simplex Virus (HSV) packaging and an HSV origin of replication have been placed within the E3 region.

52. (New) The cloning system of claim 45, wherein the backbone plasmid further comprises HSV Amplicon sequences required for packaging and replication.

53. (New) The cloning system of claim 45, wherein the backbone plasmid further comprises one or more sequences that allow for integration of sequences into cells after viral infection.

54. (New) A shuttle plasmid comprising Ad sequences from 0 to 1 and 9.2 to 16.1 map units of an Ad genome.

55. (New) The shuttle plasmid of claim 54, wherein PacI restriction endonuclease sites flank either end of the Ad sequences.

56. (New) The shuttle plasmid of claim 54, further comprising a multiple cloning site positioned between 1 and 9.2 map units.

57. (New) The shuttle plasmid of claim 54, further comprising a cDNA of interest.

58. (New) The shuttle plasmid of claim 54, further comprising a promoter or other sequence to drive expression of a transgene.

59. (New) A host cell comprising:

(a) an Ad backbone plasmid comprising an Ad genome lacking map units 0 to 9.2, and

(b) a shuttle plasmid comprising Ad sequences from 0 to 1 and 9.2 to 16.1 map units of an Ad genome,

wherein the numbering of the map units starts with the lefthand ITR.

60. (New) The host cell of claim 59, wherein said cell expresses E1 sequences necessary for supporting adenovirus replication.

61. (New) The host cell of claim 60, wherein said cell is an animal cell.

62. (New) The host cell of claim 59, wherein said cell expresses E1, pIX, and E4 sequences required for amplification of viruses generated with an Ad backbone plasmid lacking E1, E4, and/or pIX sequences.

63. (New) The host cell of claim 62, wherein said cell is an animal cell.

64. (New) A method for producing recombinant adenovirus, said method comprising contacting a host cell with:

(a) an Ad backbone plasmid comprising an Ad genome lacking map units 0 to 9.2, and

(b) a shuttle plasmid comprising Ad sequences from 0 to 1 and 9.2 to 16.1 map units of an Ad genome,

wherein the numbering of the map units starts with the lefthand ITR.

65. (New) The method of claim 64, further comprising serially amplifying virus produced by said host cell.

66. (New) The method of claim 64, further comprising assaying for the presence of wild type virus.

67. (New) The method of claim 64, wherein said shuttle plasmid further comprises a cDNA of interest.